AMENDMENTS TO THE CLAIMS

Claims 1-22 (Canceled)

23. (New) A transgenic mouse whose genome comprises a homozygous disruption in a TRP6 gene, wherein the transgenic mouse exhibits increased pain threshold or decreased sensitivity to pain, relative to a wild-type mouse.

24. (New) The transgenic mouse of claim 23, wherein the transgenic mouse exhibits an increased latency to respond to a thermal stimulus, when compared to a wild-type mouse.

25. (New) A method of identifying an agent that modulates pain sensitivity, the method comprising:

    a) administering a putative agent to a transgenic mouse whose genome comprises a homozygous disruption in a TRP6 gene, wherein the transgenic mouse exhibits increased pain threshold or decreased sensitivity to pain; and

    b) determining whether the agent has an effect on sensitivity to pain in the transgenic mouse.

26. (New) A method of producing a transgenic mouse whose genome comprises a homozygous disruption in a TRP6 gene, the method comprising:

    a) introducing a targeting construct capable of disrupting the TRP6 gene into a mouse embryonic stem cell;

    b) introducing the mouse embryonic stem cell into a blastocyst;

    c) implanting the resulting blastocyst into a pseudopregnant mouse, wherein said mouse gives birth to a chimeric mouse; and

    d) breeding the chimeric mouse to produce the transgenic mouse whose genome comprises a homozygous disruption in the TRP6 gene;

    wherein the transgenic mouse exhibits increased pain threshold or decreased sensitivity to pain, relative to a wild-type mouse

27. (New) The transgenic mouse produced by the method of claim 26.